Flexineb™

Portable Equine Nebulizer System

User Manual

CE

nortev™

Table of Contents

INTENDED USE **3**
SAFETY INFORMATION **3**
TECHNICAL SPECIFICATION **4**
INSTRUCTIONS FOR USE **6**
MAINTENANCE **12**
TROUBLESHOOTING **13**
WARRANTY **14**
COMPLIANCE **15**
CONTACT **16**

Intended Use

The Flexineb™ is a portable equine nebulizer system intended to aerosolize veterinarian prescribed liquid solutions into a fine mist for inhalation into the airways of the horse.

⚠ The end user is liable for the safe operation of the Flexineb™ and its parts as outlined in this user manual.

⚠ Medications must be prescribed by a veterinarian and end users should follow the advice of their veterinarian at all times.

Safety Information

When using the Flexineb™ for the first time remember it is the first time for the horse too so caution is advised.
Softly place the Flexineb™ over the horses' nose and mouth with the bottom grey valve open so the horse can breathe normally. Push up until the nostrils are covered and a seal is made around the nose and mouth.
Once the horse is breathing normally and is getting used to the Flexineb™, shut the bottom valve by twisting the grey valve and commence treatment.
If the horse is resisting the mask be patient and let them look at it and smell it before attempting to fit the mask again.
If the horse starts to get scared during treatment, slightly open bottom grey valve so more air is being inhaled. Close the valve again once the horse is relaxed.
In an emergency situation the blue exit valve on the bottom of the mask can be pulled out of its grey housing to allow the horse breathe freely.
Although the mask material is soft and flexible the front aerosol chamber and battery controller is hard plastic therefore caregivers should be mindful of the risk posed by the horse shaking its head with the Flexineb™ fitted.

Technical Specification

Flow Rate:
Typically ≥1.0 ml/min with 0.9% NaCl solution.
The nebulizer flow rate is dependent on the drug used.

Aerosol Particle Size:
Typically 50% of particles generated are less than 5 microns VMD measured using Malvern Spraytech with 0.9% NaCl solution.

Medication Cup Volume:
The medication cup will hold 10ml of liquid but is expandable to 30ml using the plug in extension cup supplied. The controller has a 15 minute timer therefore if the extension cup is used the controller will need to be re-started to complete the dose.

⚠ **Battery Power:**
Battery Type: 7.4V Li-ion rechargeable battery pack.
Use the Nortev supplied battery only. Use of another type of battery may present a risk of fire or explosion.
Battery Operating Time: >3 hours from fully charged.

⚠ Battery Charging:

The battery can be charged using the Nortev supplied Charger. Use the Nortev supplied charger only. Use of an alternative charger may present a risk of fire or explosion. The battery charging time is approximately 2 hours.

⚠ Mains Power Supply:

As a backup to battery power the Flexineb™ can also be operated using the Power Supply provided with the system. The same Power Supply charges the battery. Use the Nortev Power Supply only. Use of an alternative Power Supply may present a risk of fire or explosion.

Power Supply / Charger Details:

Input: 100-240V ~ / 50-60Hz / 250mA

Output: 9V ⎓ / 1.0A

⚠ Environmental Conditions:

Operating: 5°C to 45°C and up to 95% RH

Storage and Transportation: -20°C to +45°C and 15% to 95% RH

Instructions for Use

The Flexineb™ system is very simple to set up and use.
There are two modes of use:

1. Flexineb™ Nebulizer System
2. Flexineb™ Mask with Metered Dose Inhaler

Flexineb™ Nebulizer System

Before fitting the Flexineb™ to the horses head check the following:

- Check that the system is assembled, Fig. 1
- Check the Inlet Valve is moving freely, Fig. 2
- Check the Exit Valve is moving freely, Fig. 2
- Open the vents at the bottom of the mask by rotating the exit valve housing; Fig. 2

  This helps the horse become familiar with the device
- Fill the medication cup with medication or saline strictly following the advice of your veterinarian, Fig. 3

After the above steps fit the Flexineb™ to the horses head ensuring a good seal is created between the head and the mask. Secure the mask in place using the mask straps. For safety reasons stay with the horse at all times during the nebulization process.

- When the horse is familiar with the device close the vents in the bottom of the mask by rotating the exit valve housing, Fig. 2. This activates the Inlet and Exit Valves

- Switch on the Controller to begin the nebulization process, Fig. 4
- After a few seconds the Aerosol Chamber will begin to fill with aerosol and clear as the horse inhales the aerosol
- On completion of the nebulization process switch off the controller. ***Alternatively the controller will switch off automatically after 15 minutes***
- Remove the Flexineb™ from the horse once nebulization is complete
- Clean the device between uses as described in the Maintenance section of the manual

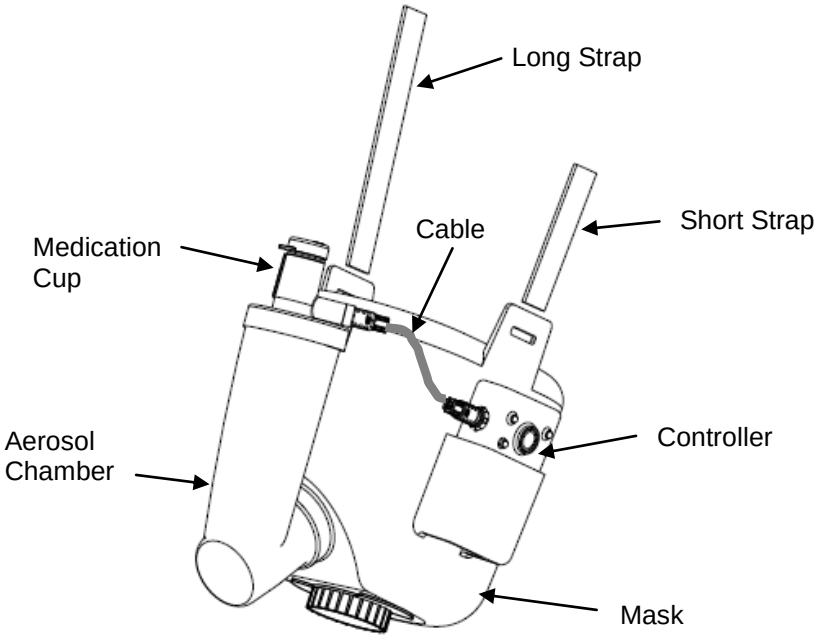


Figure 1: Flexineb™ Nebulizer System

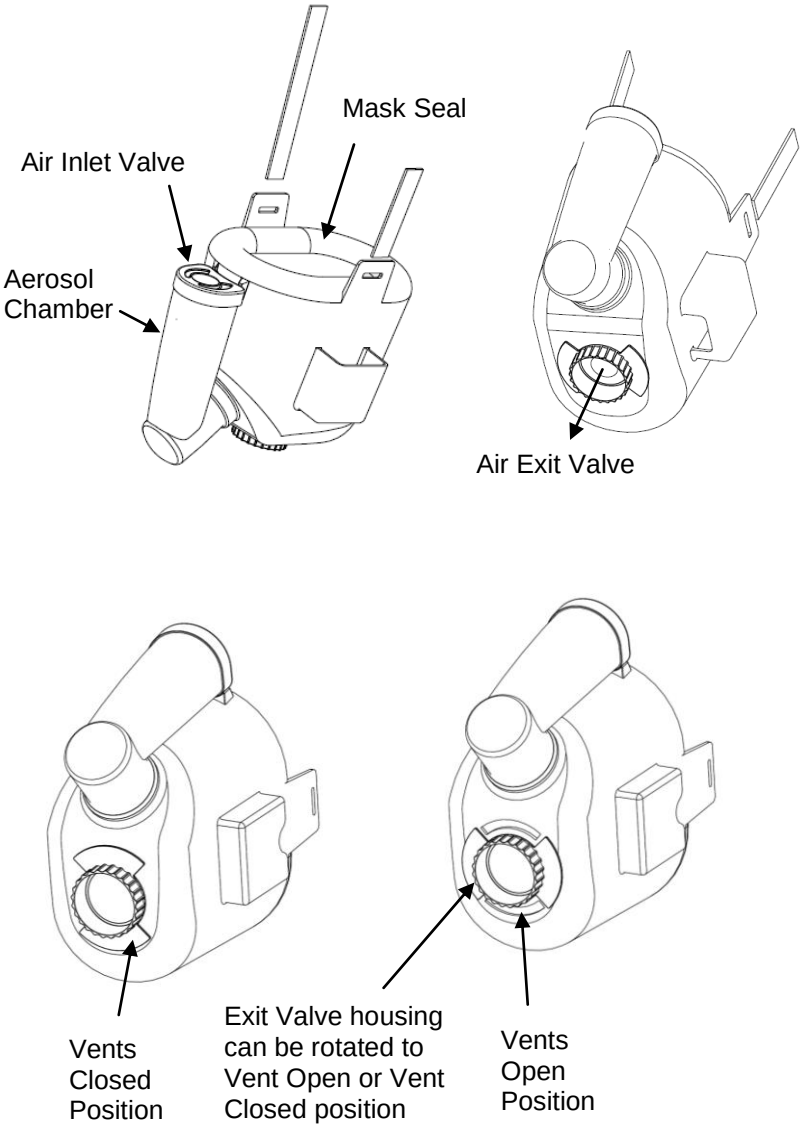

Mask Seal
Air Inlet Valve
Aerosol Chamber
Air Exit Valve
Vents Closed Position
Exit Valve housing can be rotated to Vent Open or Vent Closed position
Vents Open Position

Figure 2: Flexineb™ Mask

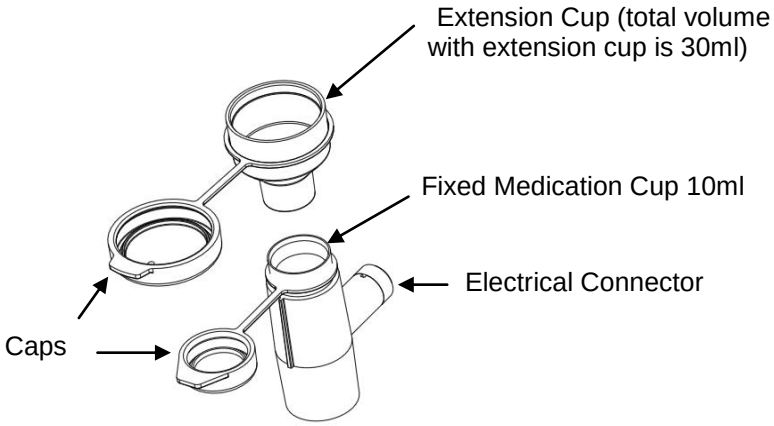


Figure 3: Flexineb™ Medication Cup

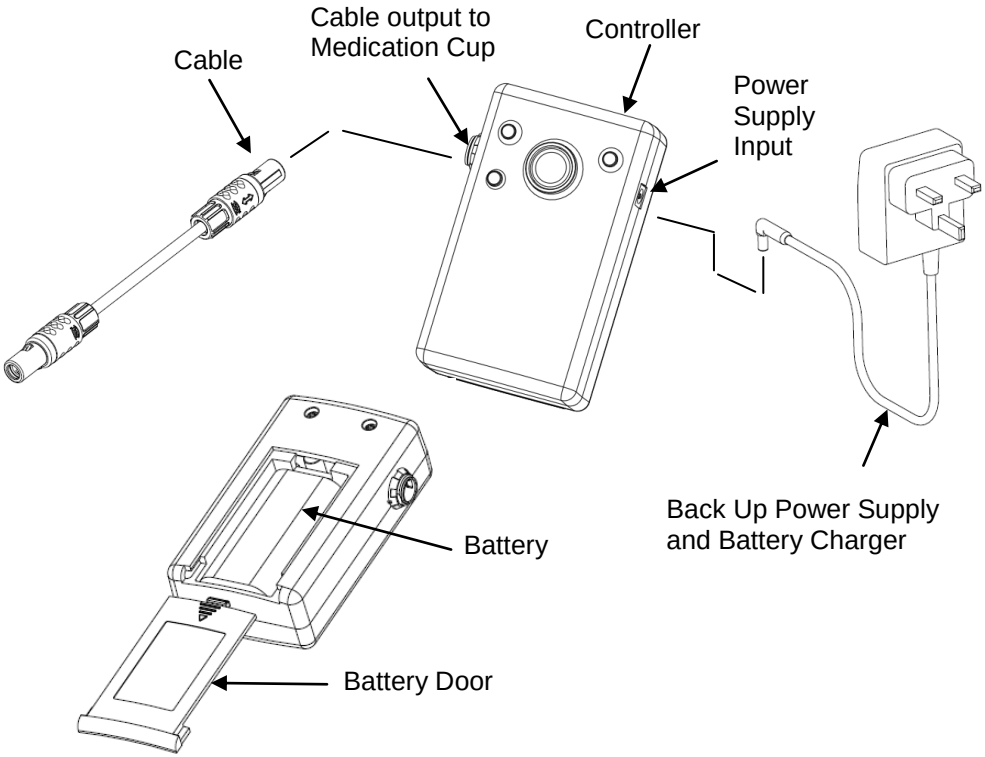


Figure 3: Flexineb™ Controller, Cable and Power Supply

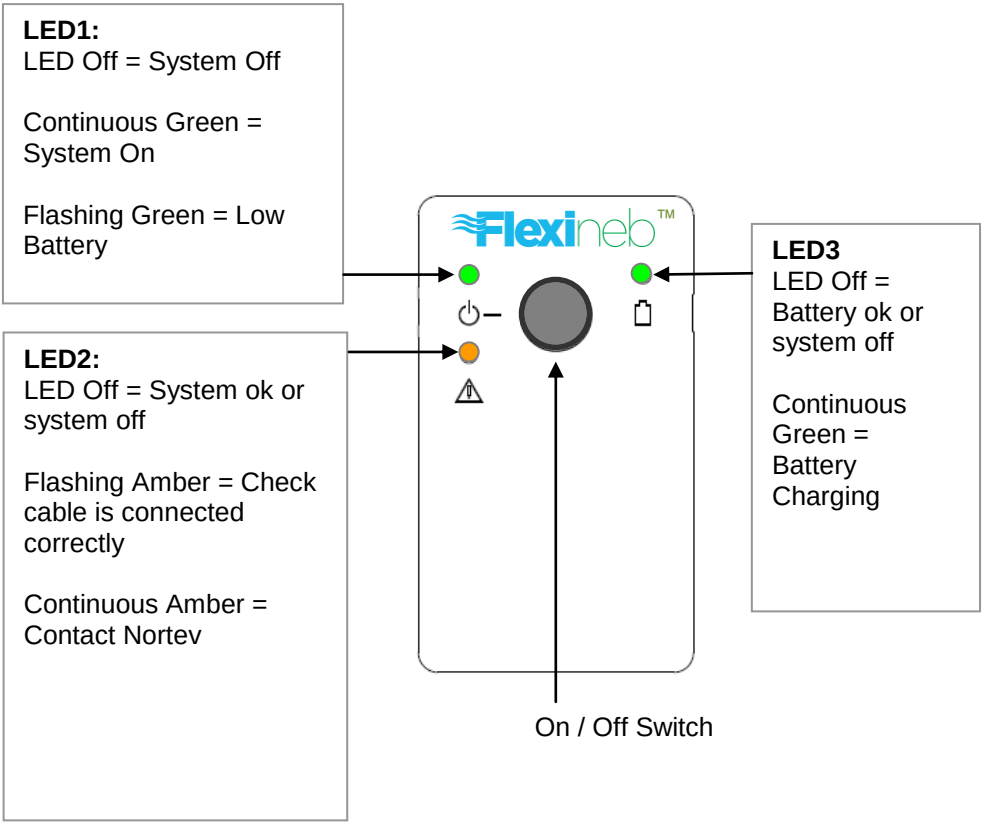

LED1:
LED Off = System Off
Continuous Green = System On
Flashing Green = Low Battery
LED2:
LED Off = System ok or system off
Flashing Amber = Check cable is connected correctly
Continuous Amber = Contact Nortev
Flexineb™
LED3
LED Off = Battery ok or system off
Continuous Green = Battery Charging
On / Off Switch

Figure 4: Flexineb™ Controller Functions

Flexineb™ Mask with Metered Dose Inhaler (MDI)

The Flexineb™ can be used with a Metered Dose Inhaler as shown in Fig.5

- Rotate the Aerosol Chamber to a horizontal position
- Use the MDI adaptor supplied and insert it into the end of the Aerosol Chamber
- Close the vents at the bottom of the mask, Fig. 2
- Insert the MDI into the MDI Adaptor
- The MDI should be in an upright position
- Activate the MDI just before the inhalation phase of the horse

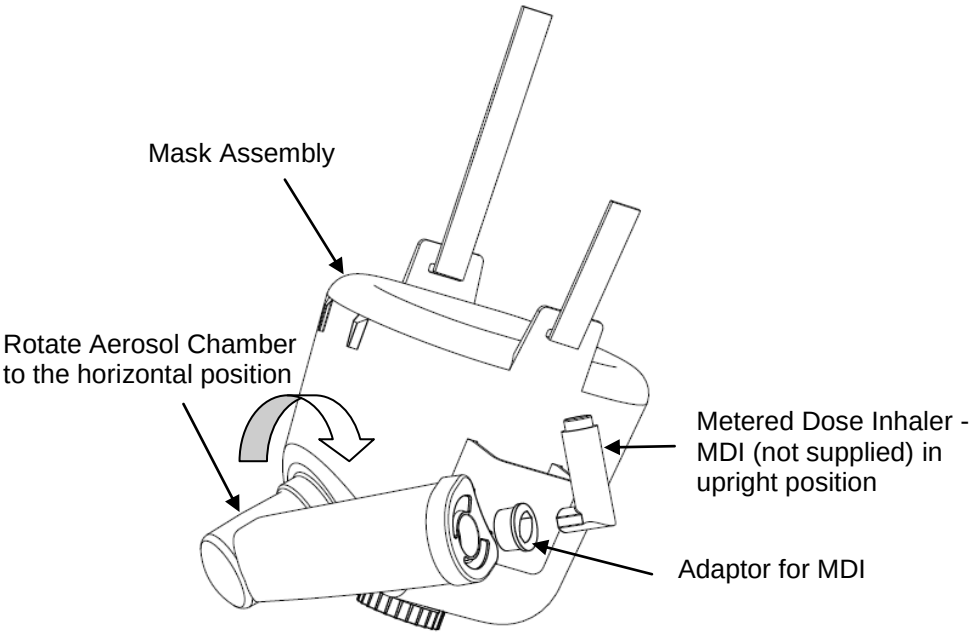

Mask Assembly
Rotate Aerosol Chamber to the horizontal position
Metered Dose Inhaler - MDI (not supplied) in upright position
Adaptor for MDI

Figure 5: Flexineb™ Metered Dose Inhaler Use

Maintenance

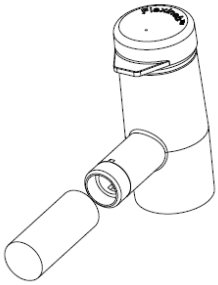
⚠ Mask

When washing the mask remove the nebulizer and controller.
To maintain the function and life of the mask and its parts it must be washed in warm soapy water and rinsed with clean water after every use.

⚠ Medication Cup

Cover the medication cup electrical connector with the supplied Protective Silicone Cap prior to washing. Do not immerse the medication cup in water.

To maintain the function of the medication cup it must be washed after each use. Put a few drops of washing up liquid and clean warm water in the medication cup, close the Cap and shake it. Gently squeeze the Cap to push warm water through the mesh. Rinse out afterwards with clean warm water. Shake off any water before re-using.



It is essential that the water is clean otherwise it may clog the mesh.

⚠ Controller

To maintain the function of the electronic controller it must be used and stored in dry conditions. To maintain the battery function it must be charged when the assigned LED flashes green, Fig. 5.

⚠ General

If the equipment is not maintained or is used in a manner not specified by the manufacturer, the electrical safety protection provided by the equipment may be impaired.

Troubleshooting

Problem	Things to check
The nebulizer will not start	• Check cable connections • Check that battery is charged • Check status of LEDs (Fig. 4) • Check if there are liquid drops on underside of the medication cup and shake off if present
The nebulizer is slow	• The nebulizer flow rate will depend on the medication used • Check that the battery is charged • Wash the medication cup per instructions • The medication cup is at the end of its life and must be replaced
The aerosol chamber does not empty when the horse inhales	• Check that vents in bottom of mask are closed and exit valve is inserted and working correctly • Check that mask is fitted properly and creating a good seal around the horses muzzle
The horse becomes uneasy during use	• Some horses may reject the smell or taste of some medications and become uneasy during use • Check that the Inlet Valve and Exit Valve are functioning correctly (Fig. 2)
If you still experience problems with your Flexineb™ system please visit www.nortev.com, call Nortevs customer service line at +353 (0)91 79 97 78	

Table 1: Troubleshooting

Warranty

The following warranty protection applies to system components:

Mask Assembly (*excludes inlet and exit valve*): 12 months
The valves are wearing parts and are not covered by warranty protection.

Medication Cup:
The medication cup is a wearing part and its life is very dependent on the drug used and how well it is maintained between uses therefore the medication cup component is not covered by warranty protection.

Controller and Cable: 12 months

Battery: 6 months

Power Supply: 12 months

Any damage caused by improper handling is not subject to warranty protection. The warranty expires when the device has been interfered with by a third party.

Compliance

The Flexineb™ system complies with the essential requirements of the following European Directives and Harmonised Standards:

Directives:
DIRECTIVE 2004/108/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility and repealing Directive 89/336/EEC

DIRECTIVE 2006/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 12 December 2006 on the harmonisation of the laws of Member States relating to electrical equipment designed for use within certain voltage limits

Harmonised Standards:
EN61326, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN610004-11, EN61010-1

Contact

For general, technical and scientific information check out our website www.nortev.com

To order replacement parts visit our online shop at www.nortev.com

For Customer Service call +353 (0)91 79 97 78

Postal Address:

Nortev Limited
Unit 18
Corporate Park
Claregalway
Co. Galway
Ireland